

Muscle Pump Activator Device: A Case Study in Chronic Leg Lymphedema and Papillomas

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Aim

To evaluate the geko™ wound therapy device to reduce chronic lymphedema and papillomas prior to initiating compression therapy.

Procedure/Method

- A 60-year-old lady resided in a Long-Term Care (LTC) setting since 2017.¹ She was confined to bed for 4 years, developed papillomas over the lateral aspect of the right thigh with recurring infections secondary to chronic lymphedema.²
- Previous treatment modalities included best practices and evidence-based therapies. In 2021, the geko™ wound therapy device was implemented as an adjunctive therapy. Consent for photos and reproduction for publication was obtained from the resident.
- The geko™ wound therapy device was placed over the right fibular head as directed in the Manufacturers Instructions for Use to stimulate the common peroneal nerve which activates the calf and foot muscle pumps.
- This action improves venous return, reduces edema, increases microcirculation, blood flow velocity and pulsatility.³

- Prior to initiating the geko™ wound therapy device average daily urinary output was 800-1000cc's per day.
- During four weeks of geko™ wound therapy treatment the urinary output was 4-5L/day with a weight loss of 60lbs.
- There was no impact on the patients' serum potassium (pre geko™ -3.6mmol/L, post geko™ -4.8mmol/L).
- The resident tolerated the fluid shift well, the papillomas reduced in size and scaled off with light friction during cleaning.

Findings/Results

- Prior to initiating the geko™ device, she was unable to tolerate high compression therapy due to pain.
- Following the reduction of edema, she was fitted with tubular elastic compression. Her caregivers reported that she experienced an improved quality of life and was able to sit in a chair for 2-hour intervals.
- Psychologically, the resident indicated that she "feels great," and was pleased to become more engaged in her care by moving independently in bed.

Implications/Applications

- The outcome and potential application of the geko™ wound therapy device used as an adjunctive therapy can significantly reduce edema, and decrease pain to comfortably initiate compression therapy that wasn't previously tolerated.³
- The staff expressed that the geko™ wound therapy device was easy to use, they were happy with the results. This was a positive experience for both the caregivers and the resident.

References

1. Harris C, Ramage D, Boloorch A, Vaughan L, Kuilder G, Rakas S. Using a muscle pump activator device to stimulate healing for non-healing lower leg wounds in long-term care residents. *Int Wound J.* 2019 Feb;16(1):266-274. doi: 10.1111/iwj.13027. Epub 2018 Nov 20. PMID: 30460740; PMCID: PMC7379663. Online available: <https://pubmed.ncbi.nlm.nih.gov/30460740/>
2. Harris C, Rabley-Koch C, Ramage D and Cattrysse R. Debilitating chronic veno-lymphoedema: using a muscle pump activator medical device to heal wounds and improve skin integrity. Case Study Online available: <https://www.gekodevices.com/wp-content/uploads/2019/06/Debilitating-chronic-venolymphoedema-using-a-muscle-pump-activator-medicaldevice-to-heal-wounds-and-improve-skin-integrity.pdf>
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October 13



October 19



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November 3